ULTRATONE K3000FX/K1800FX/K900FX/K450FX

User's manual

GB

Version 1.1 April 2006

www.behringer.com

BEHRINGER®
JUST LISTEN.

IMPORTANT SAFETY INSTRUCTIONS

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CAUTION: To reduce the risk of electric shock, do not remove the top cover (or the rear section). No user serviceable parts inside; refer servicing to qualified personnel.

WARNING: To reduce the risk of fire or electric shock, do not expose this appliance to rain and moisture. The apparatus shall not be exposed to dripping or splashing and no objects filled with liquids, such as vases, shall be placed on the apparatus.

This symbol, wherever it appears, alerts you to the presence of uninsulated dangerous voltage inside the enclosure—voltage that may be sufficient to constitute a risk of shock.

This symbol, wherever it appears, alerts you to important operating and maintenance instructions in the accompanying literature. Please read the manual.

DETAILED SAFETY INSTRUCTIONS:

1) Read these instructions.

2) Keep these instructions.

3) Heed all warnings.

4) Follow all instructions.

5) Do not use this apparatus near water.

6) Clean only with dry cloth.

7) Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.

8) Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.

9) Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.

10) Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.

11) Only use attachments/accessories specified by the manufacturer.

12) Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.

13) Unplug this apparatus during lightning storms or when unused for long periods of time.

14) Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.

15) CAUTION - These service instructions are for use by qualified service personnel only. To reduce the risk of electric shock do not perform any servicing other than that contained in the operation instructions unless you are qualified to do so.

FOREWORD

Dear Customer,

Welcome to the team of ULTRATONE users and thank you very much for expressing your confidence in BEHRINGER products by purchasing this keyboard amp.

It is one of my most pleasant tasks to write this letter to you, because it is the culmination of many months of hard work delivered by our engineering team to reach a very ambitious goal: to present you with a series of outstanding keyboard amplifiers that give you maximum flexibility and performance with their unique sound character and broad range of functions.

The task to design the new ULTRATONE series certainly meant a great deal of responsibility, which we assumed by focusing on you, the discerning user and musician. It also meant a lot of work and night shifts to accomplish this goal. But it was fun, too. Developing a product usually brings a lot of people together, and what a great feeling it is when everybody who participated in such a project can be proud of what we've achieved.

It is our philosophy to share our joy with you, because you are the most important member of the BEHRINGER team. With your highly competent suggestions for new products you've greatly contributed to shaping our company and making it successful. In return, we guarantee you uncompromising quality as well as excellent technical and audio properties at an extremely favorable price. All of this will enable you to fully unfold your creativity without being hampered by budget constraints.

We are often asked how we can produce such high-grade devices at such unbelievably low prices. The answer is quite simple: it's you, our customers! Many satisfied customers means large sales volumes enabling us to get better conditions of purchase for components, etc. Isn't it only fair to pass this benefit back to you? Because we know that your success is our success, too!

I would like to thank all people whose help on "Project ULTRATONE" has made it all possible. Everybody has made very personal contributions, starting from the designers of the unit to the many staff members in our company and finally to you, the users of BEHRINGER products.

My friends, it's been worth the trouble!

Thank you very much,

Uli Behringer

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1. INTRODUCTION

Congratulations! The ULTRATONE is a modern, powerful keyboard amplifier with the qualities of a complete PA system. It combines a whole lot of features, huge power reserves and extreme flexibility in one device, and thanks to its comprehensive connection and extension options—for example Stereo Link facility for true stereo operation and additional Line Out for direct connection to a mixing console—you will always be able to achieve the best possible performance in every situation.

1.1 Before you get started

1.1.1 Shipment

Your ULTRATONE was carefully packed at the factory, and the packaging was designed to protect the unit from rough handling. Nevertheless, we recommend that you carefully examine the packaging and its contents for any signs of physical damage that may have occurred during transit.

☞ **If the unit is damaged, please do NOT return it to BEHRINGER. Instead, notify your dealer and the shipping company immediately. Otherwise, claims for damage or replacement may not be honored.**

☞ **Always use the original packing carton to prevent damage during storage or transport.**

☞ **Make sure that no children are left unsupervised with the ULTRATONE or its packaging.**

☞ **Please ensure proper disposal of all packing materials.**

1.1.2 Initial operation

Be sure that there is enough space around the unit for cooling and please do not place the ULTRATONE on high temperature devices such as radiators etc. to avoid overheating.

☞ **Blown fuses must be replaced by fuses of the same type and rating! Please refer to the "SPECIFICATIONS" for details.**

The mains connection of the ULTRATONE is made by using the enclosed mains cable and a standard IEC receptacle. It meets all of the international safety certification requirements.

☞ **Please make sure that all units have a proper ground connection. For your own safety, never remove or disable the ground conductor from the unit or of the AC power cord.**

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1.1.3 Online registration

Please do remember to register your new BEHRINGER equipment right after your purchase by visiting www.behringer.com (alternatively www.behringer.de) and kindly read the terms and conditions of our warranty carefully.

Should your BEHRINGER product malfunction, our goal is to have it repaired as quickly as possible. To arrange for warranty service, please contact the retailer from whom the equipment was purchased. Should your BEHRINGER dealer not be located in your vicinity, you may directly contact one of our subsidiaries. Corresponding contact information is included in the original equipment packaging (Global Contact Information/European Contact Information). Should your country not be listed, please contact the distributor nearest you. A list of distributors can be found in the support area of our website (www.behringer.com).

Registering your purchase and equipment with us helps us process your repair claims quicker and more efficiently.

Thank you for your cooperation!

ATTENTION!

☞ **High volume levels can damage your hearing or your headphones. Please turn down the VOLUME control to zero (all the way to the left) before you power up the amp. Always make sure you use appropriate volume levels.**

2. CONTROL ELEMENTS

[1] The *LEVEL* controls adjust the signal level of channels 1 - 4 (K900FX and K450FX: channels 1 - 3).

[2] The four *FX* controls adjust the channel 1 - 4 signal level at the input of the integrated effects processor (K900FX and K450FX: three controls for channels 1 - 3).

[3] The channel 4 signal (K3000FX and K1800FX only) is normally routed just to the PHONES output without effects. This way you can practice without being heard, or you can connect a metronome that you need on headphones but not on speakers. By pressing the *TO MAIN* button the signal will be additionally routed to the speakers without effects.

[4] By pressing the *TO LINE OUT* button the channel 4 signal will be additionally routed to the LINE OUT output without effects (K3000FX and K1800FX only).

☞ **If you press both the TO MAIN and TO LINE button, channel 4 will be equal to channels 1 - 3. The signal will be routed to the speakers and the LINE OUT output including effects.**

[5] The ULTRATONE is equipped with a 7-band graphic equalizer (K900FX and K450FX: 5-band graphic equalizer). Use the EQ to adapt the sound to the room acoustics.

[6] Press the *FBQ* switch to activate the FBQ Feedback Detection System. The frequencies causing feedback are shown by the brightly lit fader LEDs. Simply lower the level of the respective frequency range until feedback disappears and the LED goes out.

[7] The *FX* display shows the currently selected preset. The *SIG* LED lights up when the effects processor receives an input signal. When the *CLIP* LED lights up please reduce the effects input signal by using the respective FX control(s) [2].

[8] Turn the *FX* control to select an effects preset (preset number starts flashing). Push the control briefly to confirm your selection.

[9] The *LEVEL* control in the master section is used to adjust the main output volume.

[10] Turn the *FX RET* control to add the effect signal to the main mix.

[11] Pressing the *SHAPE* button will add the Shape effect to the main signal. The Shape function on your ULTRATONE provides a revolutionary type of filter that you can use to modify your keyboard sound (K3000FX and K1800FX only).

[12] Use the *PHONES* jack to plug in your headphones.

[13] The *PHONES LEVEL* control adjusts the headphones output level (K3000FX and K1800FX only).

[14] Use the *POWER* switch to switch the ULTRATONE on or off. You should always make sure that the POWER switch is in the “Off” position when initially connecting the unit to the mains.

To disconnect the unit from the mains, pull out the main cord plug. When installing the product, ensure that the plug is easily accessible.

☞ **Please note: Merely switching the unit off does not mean that it is fully disconnected from the mains. When not using the unit for prolonged periods of time, please unplug the unit’s power cord from the power outlet.**

[15] *MAINS CONNECTION*. Use the power cord supplied with the unit to connect it to the mains.

[16] *FUSE HOLDER/VOLTAGE SELECTOR*. Before connecting the unit to the mains, make sure that the voltage setting matches your local voltage. A blown fuse should only be replaced by a fuse of the same type and rating. On some units, the fuse holder can be switched to one of two positions, i.e. 230 V and 120 V. When operating the unit outside Europe at 120 V, a higher fuse rating is required.

[17] The *GROUND LIFT* switch disconnects (switch pressed) the ground connection at the LINE OUT output to effectively eliminate hum noise resulting from ground loops (K3000FX and K1800FX only).

[18] Use the balanced *LINE OUT* XLR connectors to feed the audio signal from your ULTRATONE to a mixing console (K3000FX and K1800FX only). The LINE OUT signal is post-EQ.

[19] These are the *LINE OUT* outputs on 1/4" TS connectors (K900FX and K450FX: one 1/4" TS connector).

☞ **Both XLR and 1/4" TS LINE OUT connectors can be used simultaneously.**

[20] For stereo operation the ULTRATONE features a *STEREO LINK* facility. You can connect the *OUT* of the ULTRATONE to the LINK IN of another keyboard amp that serves as slave to achieve true stereo sound. When using the ULTRATONE as slave, connect the LINK OUT of the master amp to the *IN* (K3000FX and K1800FX only).

[21] The *SUB OUT* connector provides the line-level mono subwoofer signal for connection to the input of a power amp or active subwoofer.

[22] Connect your footswitch to the *FOOT SW* jack, so as to activate/deactivate the effects processor.

[23] Use the *CD IN* (K900FX and K450FX: *AUX IN*) connectors to connect the output of your CD player, tape deck, CD or MD walkman. This way you can play along to music or keyboard tutorial CDs.

[24] These are the *LINE* inputs for channels 1 - 4 on 1/4" TS connectors. For mono input signals please use the L (MONO) connector.

[25] Channel 1 is equipped with an additional XLR *MIC* input. Due to internal +15 V phantom power you can even use condenser microphones. Both XLR and 1/4" TS connectors can be used simultaneously. In this case the LEVEL control of channel 1 adjusts both the level of the LINE and MIC signal.

[26] *SERIAL NUMBER*.

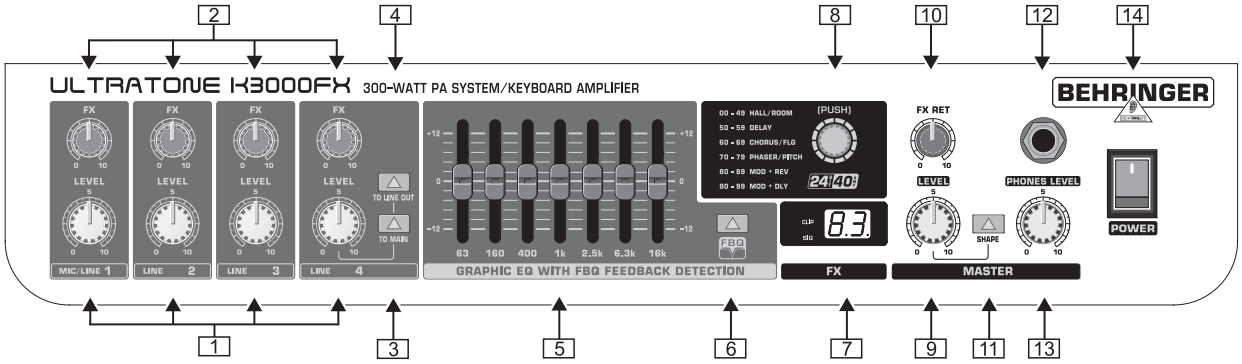

Fig. 2.1: Front panel control elements (K3000FX and K1800FX)

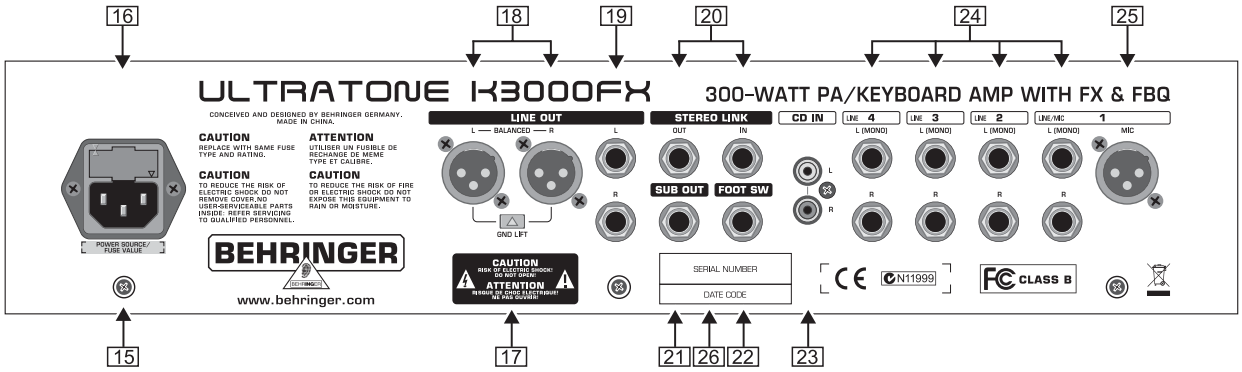

Fig. 2.2: Rear panel control elements (K3000FX and K1800FX)

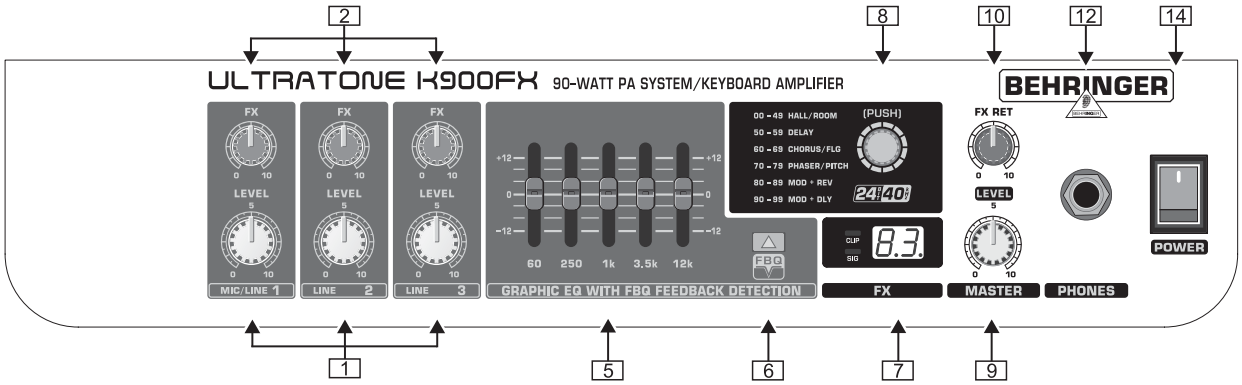

Fig. 2.3: Front panel control elements (K900FX and K450FX)

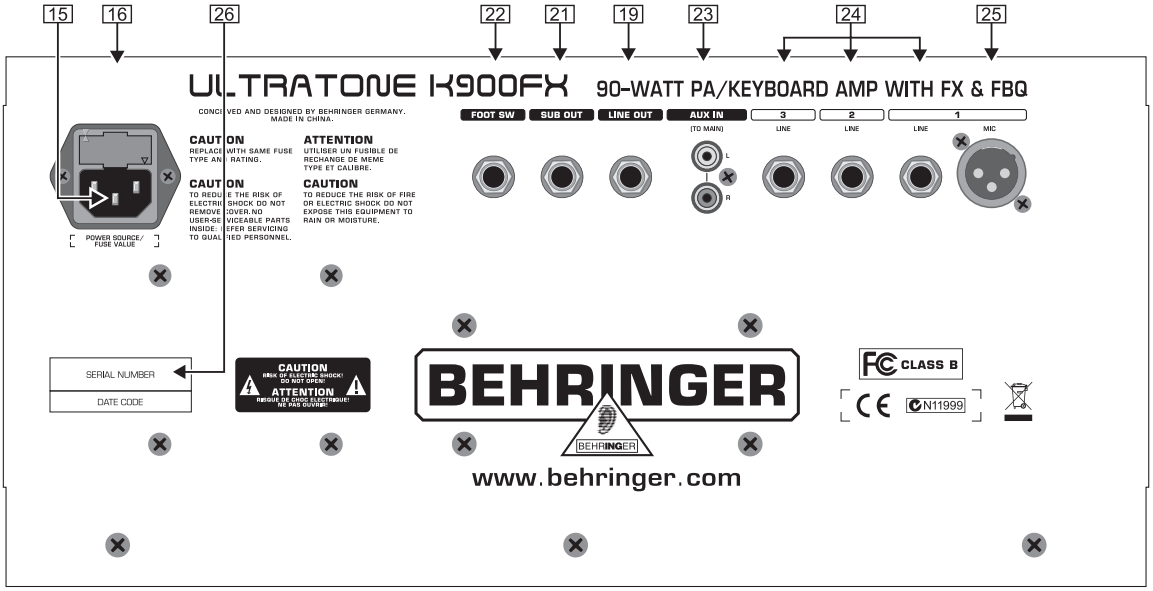

Fig. 2.4: Rear panel control elements (K900FX and K450FX)

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3. WIRING TIPS

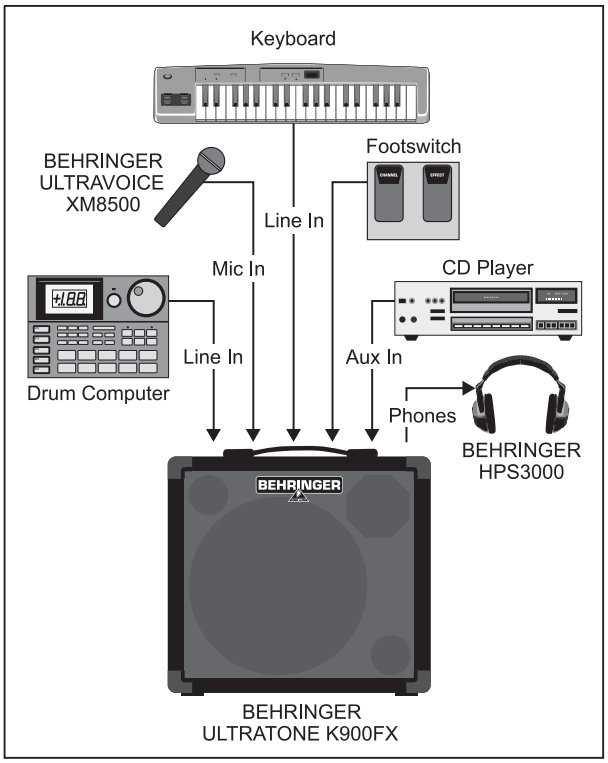

Fig. 3.1: Example of a setup using the ULTRATONE

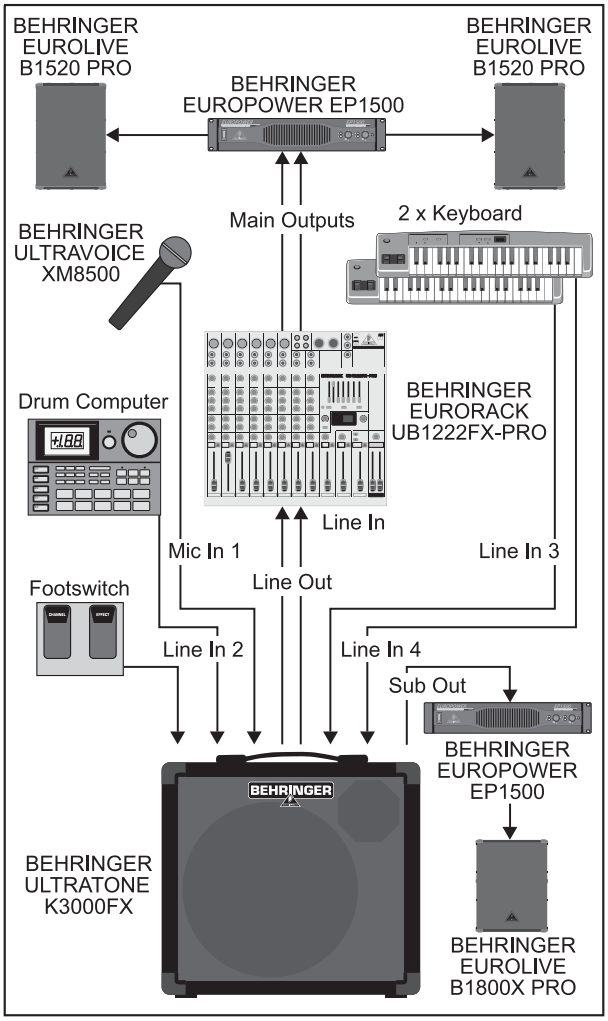

Fig. 3.2: Live setup

Fig. 3.1 shows how to connect your keyboard, a drum machine and a microphone to the ULTRATONE. Additionally a CD player is connected to the AUX IN input to feed in a playback. With the footswitch you can activate/deactivate the internal effects processor.

Fig. 3.2 shows a recommended setup for amplifying the sound of your ULTRATONE using a sound reinforcement system of any size. This way, you can also use your amp for playing live or for rehearsals with your band.

4. AUDIO CONNECTIONS

The ULTRATONE features 1/4" connectors on inputs and outputs plus additional balanced XLR connectors for channel 1 input and Line Out outputs (K3000FX and K1800FX). More detailed information can be found in chapter 5, “SPECIFICATIONS.”

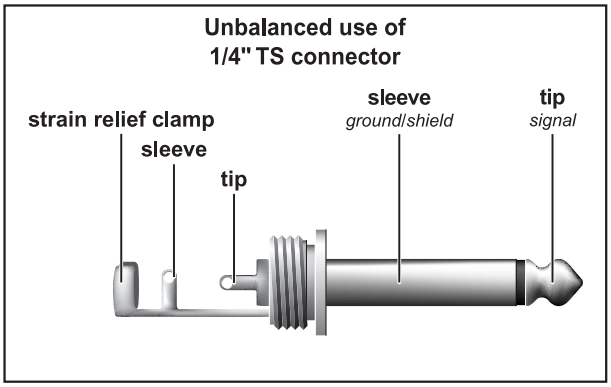

Fig. 4.1: 1/4" TS connector

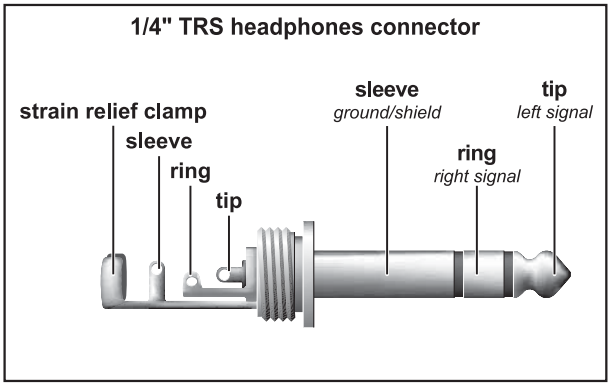

Fig. 4.2: 1/4" TRS connector

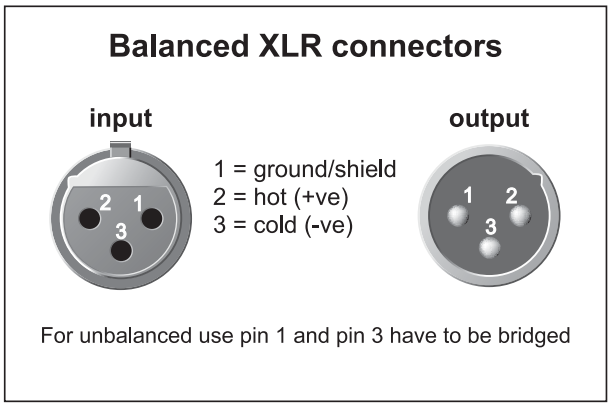
Balanced XLR connectors
input
output
1 = ground/shield
2 = hot (+ve)
3 = cold (-ve)
For unbalanced use pin 1 and pin 3 have to be bridged

Fig. 4.3: XLR connectors

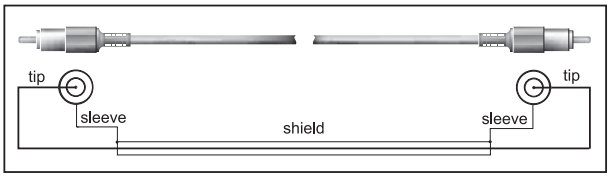

Fig. 4.4: RCA cable (for CD IN/AUX IN connection)

5. SPECIFICATIONS

	K450FX	K900FX	K1800FX	K3000FX
AUDIO INPUTS				
Line In 1 - 4	1/4" TS connector			
Input impedance	approx. 30 kΩ balanced			
Stereo Link In	1/4" TS connector			
Input impedance	approx. 20 kΩ unbalanced			
CD In/Aux In	RCA connector			
Input impedance	approx. 20 kΩ unbalanced			
Mic In 1	XLR connector			
Input impedance	approx. 2 kΩ balanced			
AUDIO OUTPUTS				
Headphones connector	1/4" TRS connector			
Line Out	1/4" TS and XLR connector			
Output impedance	1/4" TS connector: approx.150 Ω unbalanced XLR connector: approx. 300 Ω balanced			
Stereo Link Out	1/4" TS connector			
Output impedance	approx. 150 Ω unbalanced			
Sub Out	1/4" TS connector			
Output impedance	approx. 150 Ω unbalanced			
EQUALIZER				
Type	Graphic EQ with FBQ Feedback Detection			
Frequency range	63 Hz / 250 Hz / 1 kHz / 3.5 kHz / 12 kHz		63 Hz / 160 Hz / 400 Hz / 1 kHz / 2.5 kHz / 6.3 kHz / 12 kHz	
Bandwidth	2/3-oct.			
Control range	+12 to -12 dB			
DIGITAL EFFECTS PROCESSOR				
Converters	24-bit sigma-delta, 64/128-times oversampling			
Sampling rate	40 kHz			
SYSTEM SPECIFICATIONS				
Power amp output	45 Watts	90 Watts	180 Watts	300 Watts
LOUDSPEAKER				
Type	10" BUGERA™ speaker	12" BUGERA™ woofer and custom-made 1" driver	12" BUGERA™ woofer and custom-made 1" driver	15" BUGERA™ woofer and custom-made 1" driver
Input impedance	4 Ω			
POWER SUPPLY				
Mains voltage	USA/Canada 120 V~, 60 Hz U.K./Australia 230 V~, 50 Hz Europe 230 V~, 50 Hz China/Korea 220 V~, 50 Hz Japan 100 V~, 50 - 60 Hz			
General export model	120/230 V~, 50 - 60 Hz			
Power consumption	approx. 75 Watts	approx. 150 Watts	approx. 290 Watts	approx. 350 Watts
Fuse	100 - 120 V~: **2.5 A H** 250 V	100 - 120 V~: **3.5 A H** 250 V	100 - 120 V~: **6.3 A H** 250 V	100 - 120 V~: **6.3 A H** 250 V
	220 - 240 V~: **1.25 A H** 250 V	220 - 240 V~: **1.6 A H** 250 V	220 - 240 V~: **3.15 A H** 250 V	220 - 240 V~: **3.15 A H** 250 V
Mains connection	Standard IEC receptacle			
DIMENSIONS/WEIGHT				
Dimensions	approx. 419 mm (16 1/2") x 441 mm (17 3/8") x 299 mm (11 3/4")	approx. 429 mm (16 7/8") x 492 mm (19 3/8") x 299 mm (11 3/4")	approx. 429 mm (16 7/8") x 492 mm (19 3/8") x 299 mm (11 3/4")	approx. 530 mm (20 7/8") x 597 mm (23 1/2") x 406 mm (16")
Weight	approx. 14.6 kg (32.19 lbs.)	approx. 18.8 kg (41.45 lbs.)	approx. 20.1 kg (44.32 lbs.)	approx. 29.5 kg (65.04 lbs.)

BEHRINGER is constantly striving to maintain the highest professional standards. As a result of these efforts, modifications may be made from time to time to existing products without prior notice. Specifications and appearance may differ from those listed or shown.

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6. WARRANTY

§ 1 OTHER WARRANTY RIGHTS AND NATIONAL LAW

1. This warranty does not exclude or limit the buyer's statutory rights provided by national law, in particular, any such rights against the seller that arise from a legally effective purchase contract.

2. The warranty regulations mentioned herein are applicable unless they constitute an infringement of national warranty law.

§ 2 ONLINE REGISTRATION

Please do remember to register your new BEHRINGER equipment right after your purchase by visiting www.behringer.com (alternatively www.behringer.de) and kindly read the terms and conditions of our warranty carefully. Registering your purchase and equipment with us helps us process your repair claims quicker and more efficiently. Thank you for your cooperation!

§ 3 WARRANTY

1. BEHRINGER (BEHRINGER International GmbH including all BEHRINGER subsidiaries listed on the enclosed page, except BEHRINGER Japan) warrants the mechanical and electronic components of this product to be free of defects in material and workmanship for a period of one (1) year* from the original date of purchase, in accordance with the warranty regulations described below. If the product shows any defects within the specified warranty period that are not excluded from this warranty as described under § 5, BEHRINGER shall, at its discretion, either replace or repair the product using suitable new or reconditioned parts. In the case that other parts are used which constitute an improvement, BEHRINGER may, at its discretion, charge the customer for the additional cost of these parts.

2. If the warranty claim proves to be justified, the product will be returned to the user freight prepaid.

3. Warranty claims other than those indicated above are expressly excluded.

§ 4 RETURN AUTHORIZATION NUMBER

1. To obtain warranty service, the buyer (or his authorized dealer) must call BEHRINGER (see enclosed list) during normal business hours **BEFORE** returning the product. All inquiries must be accompanied by a description of the problem. BEHRINGER will then issue a return authorization number.

2. Subsequently, the product must be returned in its original shipping carton, together with the return authorization number to the address indicated by BEHRINGER.

3. Shipments without freight prepaid will not be accepted.

§ 5 WARRANTY REGULATIONS

1. Warranty services will be furnished only if the product is accompanied by a copy of the original retail dealer's invoice. Any product deemed eligible for repair or replacement under the terms of this warranty will be repaired or replaced.

2. If the product needs to be modified or adapted in order to comply with applicable technical or safety standards on a national or local level, in any country which is not the country for which the product was originally developed and manufactured, this modification/adaptation shall not be considered a defect in materials or workmanship. The warranty does not cover any such modification/adaptation, irrespective of whether it was carried out properly or not. Under the terms of this warranty, BEHRINGER shall not be held responsible for any cost resulting from such a modification/adaptation.

3. Free inspections and maintenance/repair work are expressly excluded from this warranty, in particular, if caused by improper handling of the product by the user. This also applies to defects caused by normal wear and tear, in particular, of faders, crossfaders, potentiometers, keys/buttons, tubes, guitar strings, illuminants and similar parts.

4. Damages/defects caused by the following conditions are not covered by this warranty:

- ▲ improper handling, neglect or failure to operate the unit in compliance with the instructions given in BEHRINGER user or service manuals.
- ▲ connection or operation of the unit in any way that does not comply with the technical or safety regulations applicable in the country where the product is used.
- ▲ damages/defects caused by force majeure or any other condition that is beyond the control of BEHRINGER.

5. Any repair or opening of the unit carried out by unauthorized personnel (user included) will void the warranty.

6. If an inspection of the product by BEHRINGER shows that the defect in question is not covered by the warranty, the inspection costs are payable by the customer.

7. Products which do not meet the terms of this warranty will be repaired exclusively at the buyer's expense. BEHRINGER will inform the buyer of any such circumstance. If the buyer fails to submit a written repair order within 6 weeks after notification, BEHRINGER will return the unit C.O.D. with a separate invoice for freight and packing. Such costs will also be invoiced separately when the buyer has sent in a written repair order.

§ 6 WARRANTY TRANSFERABILITY

This warranty is extended exclusively to the original buyer (customer of retail dealer) and is not transferable to anyone who may subsequently purchase this product. No other person (retail dealer, etc.) shall be entitled to give any warranty promise on behalf of BEHRINGER.

§ 7 CLAIM FOR DAMAGES

Failure of BEHRINGER to provide proper warranty service shall not entitle the buyer to claim (consequential) damages. In no event shall the liability of BEHRINGER exceed the invoiced value of the product.

* Customers in the European Union please contact BEHRINGER Germany Support for further details.

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Hanns-Martin-Schleyer-Str. 36-38, 47877 Willich-Münchheide II, Germany.
Tel. +49 2154 9206 0, Fax +49 2154 9206 4903